



Fig.

mortality was noted when comparing patients with prophylactic vs. post-op drains.

**Conclusions:** SCI can be a devastating complication after TEVAR and patients without functional improvement have a dismal prognosis. Measures to decrease the rate of SCI and/or mitigate its severity are needed. Timing of drain placement does not appear to have an impact on functional recovery.

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## RR25.

### Outcomes following Late Explantation of Aortic Endografts Depend on the Indication

Shipra Arya<sup>1</sup>, Dawn M. Coleman<sup>1</sup>, Jordan Knepper<sup>1</sup>, Peter K. Henke<sup>1</sup>, Gilbert R. Upchurch<sup>2</sup>, John E. Rectenwald<sup>1</sup>, Enrique Criado<sup>1</sup>, Jonathan L. Eliason<sup>1</sup>, Katherine Gallagher<sup>1</sup>. <sup>1</sup>Vascular Surgery, University of Michigan, Ann Arbor, MI; <sup>2</sup>University of Virginia, Charlottesville, VA

**Objectives:** This study compares our experience with explantation of aortic endografts for endoleak versus infection.

**Methods:** The medical records of 1500 aortic procedures performed at our center were queried from 2002-2011. Relevant data from patients needing explantation of aortic endografts was analyzed.

**Results:** 36 patients underwent aortic explantation (63.9% male). Mean age was 71.6 years with a mean aneurysm size of 6.6cm (range 3.5 - 10.7cm). Hypertension (97%), hyperlipidemia (77.8%) and smoking (83%) were the most prevalent risk factors. Mean time to explant was 45.3 months (range 2.2- 118.4 months). The primary explant indication was endoleak in 24 (66.7%) and infection in 12 (33.3%) patients. Thirty-day morbidity was

54%(endoleak) and 83%(infection). There were 2 deaths(16.7%) in the infection group within 30 days. Five patients were symptomatic, while 2 patients had ruptured aneurysms. In the endoleak group, there were 9 type Ia, 7 type II, 1 type III, 3 type V, 1 rupture and 3 patients with multiple endoleaks. 78% of patients were alive at a mean follow-up of 17.4 months.

**Conclusions:** This is the largest endograft explantation series to date. Patients with an infectious etiology have significantly worse morbidity and mortality than patients requiring explantation for endoleaks.

**Table.** Peri-operative variables by indication for explant

Peri-operative variable	Endoleak (n = 24)	Infection (n = 12)
Males (%)	50.0	91.7 <sup>a</sup>
ASA class > 3 at explant (%)	50.0	66.7 <sup>a</sup>
Supra-mesenteric clamping (%)	4.4	50.0 <sup>a</sup>
Re-exploration needed (%)	4.2	41.7 <sup>a</sup>
Post-op DIC (%)	0	25.0 <sup>a</sup>
30-day mortality (%)	0	16.7
Intra-op blood loss (Liters)	3.3	6.3 <sup>a</sup>
Mean PRBCs transfused intra-op (n)	4.3	12.2 <sup>a</sup>
ICU length of stay (days)	5.4	10.4
Length of stay (days)	12.2	18.7

ASA, American Society of Anesthesiologists; DIC, disseminated intravascular coagulation; ICU, intensive care unit

<sup>a</sup>P<0.05

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## RR26.

### Primary Balloon Angioplasty of Small (≤2 mm) Cephalic Veins Shortens Maturation Time, Decreases Re-interventions and Improves Mid-term Patency of Arteriovenous Fistulae

Pierfrancesco Veroux<sup>1</sup>, Tiziano Tallarita<sup>1</sup>, Alessia Giacquinta<sup>1</sup>, Peter Gloviczki<sup>2</sup>, Massimiliano Veroux<sup>1</sup>. <sup>1</sup>Poli-clinico of Catania, Catania, Italy; <sup>2</sup>Mayo Clinic, Rochester, MN

**Objectives:** To evaluate the novel technique of Primary Balloon Angioplasty (PBA) of cephalic veins with diameter ≤2mm on patency of radio-cephalic arteriovenous fistulae (AVF) before performing the anastomosis.

**Methods:** Forty patients, all candidates for distal radio-cephalic fistula, with a cephalic vein ≤2 mm, were randomized to undergo dilatation of the cephalic veins with two different techniques, before performing the anastomosis: A) PBA of a long cephalic vein segment from the wrist up to the elbow (n=19); B) hydrostatic dilatation (HD) of a short venous segment (5cm) at the level of the anastomosis (n=21). PBA was performed using a Pacific Extreme

Balloon (3.5/4 x 150 mm, Medtronic), inflated at 12 ATM of pressure for a period of 60 seconds. Primary endpoints were primary and assisted patency rates, re-intervention rate, and maturation time. Follow up included physical and DUS examinations at 1-4-8 weeks and every 3 months thereafter.

**Results:** Immediate success rate was 100% for PBA and 67% for HD groups ( $P = .04$ ). Cause of failure in HD group included early vein thrombosis in 7 (33%) patients; Mean fistula maturation time was 32 days (21-38 days) in PBA group and 55 days (34-60 days) in HD group ( $P = .04$ ). During the mean follow up of 7 months (1 to 15 months), 3 patients (7.5%) underwent successful PTA for failure AVF to mature due to stenosis (1 [5.2%] in PBA and 2 [14.3%] in HD groups;  $P = .8$ ). Including both early and mid-term reinterventions, the difference between the groups was statistically significant (1 [5.2%] in PBA vs 9 [42.8%] in HD groups;  $P = .02$ ). At 6 months, primary and assisted patency rates were 94.8% and 100% in PBA Group and 57.2% and 66.7% in HD Group ( $P = .01$ ).

**Conclusions:** Primary "Preventive" Balloon Angioplasty of very small cephalic veins is a safe and feasible procedure. This new technique assures short fistula maturation time, decreased re-intervention rate and excellent mid-term primary patency.

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## RR27.

### Predictors of Maturation after a Native First Arteriovenous Fistula Creation

Yang Jin Park, Shin Suk Yang, Keun Myung Park, Dong-Ik Kim, Young-Wook Kim. Samsung Medical Center, Seoul, Republic of Korea

**Objectives:** To find predictors that affect initial autogenous hemodialysis access maturation

**Methods:** All patients undergoing autogenous hemodialysis access creation from August 2008 to December 2010 were retrospectively reviewed. We investigated type of fistula, maturation rates based on patients' clinical characteristics and findings on physical examination and preoperative DUS mapping studies. The following factors were analyzed: age, gender, body-mass index (BMI), diabetes, hypertension, hyperlipidemia, congestive heart failure (CHF), coronary artery disease (CAD), cerebrovascular disease (CVD), ejection fraction (EF, %), preoperative DUS artery and vein size, prior central catheter placement.

**Results:** 383 vascular access procedures were performed in 371 patients. Three hundred thirty one (86.4%) were autogenous AVF, among which a primary first AVF was created in 283 (85.5%); 186 (65.7%) with radiocephalic AVF (RCAVF), 95 (33.6%) with brachiocephalic

AVF (BCAVF), 2 (0.7%) with basilic vein transposition (BVT). All patients underwent preoperative DUS mapping for artery and vein sizing. RCAVF, BCAVF, BVT had 88.2%, 82.1%, 100% maturation rates in mean 39 days after creation. By univariate analysis, diabetes, CAD and vein diameter were associated with maturation rates, but there was no significant factor by multivariate analysis. In RCAVF (n=186), CHF ( $P = .041$ ), minimal forearm CV (CVmin) size ( $P = .007$ ), mean forearm CV (CVmean) size ( $P = .013$ ), and CVmin over 2mm ( $P = .002$ ) significantly affected maturation by univariate analysis. By multivariate logistic regression analysis, CVmin over 2mm ( $P = .001$ ) and non-diabetes ( $P = .046$ ) were independent predictor of RCAVF maturation.

**Conclusions:** In RCAVF, high ejection fraction, non-diabetes, CVmin over 2mm were independent predictors of primary maturation. Preoperative DUS would be recommended to encourage the use of native AVF and to promote its maturation rate.

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## RR28.

### Intermediate Results of a Non-operative Management Strategy for Blunt Thoracic Aortic Injuries

John W. York, Ginger L. Manos, Brent L. Johnson, Chris G. Carsten, Spence M. Taylor, David L. Cull, Bryan C. Morse, Stephen C. Lowe. Surgery, University Medical Center-Greenville Hospital System, Greenville, SC

**Objectives:** Traditionally, blunt thoracic aortic injuries (BTAs) have been regarded as surgical emergencies due to the perceived imminent risk of rupture and death. Due to an observed aortic stability, our group has adopted a policy of planned observation and surveillance for patients with BTAI. The aim of this study was to evaluate the intermediate outcomes of this non-operative, observational strategy.

**Methods:** A retrospective analysis of all patients with BTAI was performed at a single institution with a Level I trauma center. Aortic injuries identified by CT scan were classified as pseudoaneurysm (n=13, 76%), intimal injury (n=2, 12%), intra-mural hematoma (n=1, 6%), and localized dissection (n=1, 6%). Each patient was treated with medical anti-impulse therapy (systolic BP < 140mm; heart rate < 90bpm) in a monitored setting. CT scans were obtained at intervals during the in-hospital period and following discharge. Overall intervention-free survival and freedom from rupture was evaluated using Kaplan-Meier life table analysis.

**Results:** A total of 65 patients were identified with BTAI who survived their initial injury and were admitted to our institution. 17 patients were selected for surveillance of their BTAI with serial CT scans for a median follow-up of 22.6 months (range 1 - 128 months) and elective repair when indicated. Two patients (11%) in the observational group received open thoracic